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EXAMINER

LELE, TANMAY S

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 04/23/2004

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/786,459

Applicant(s)

TSUNEHARA ET AL.

Examiner

Tanmay S Lele

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6.8.10</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 11 and 15 – 18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in paper 3 on 10 September 2001. It is noted, however, that applicant has not filed a certified copy of the 10-362871 application as required by 35 U.S.C. 119(b).

Specification

3. The disclosure is objected to because of the following informalities: a black dotted line (probably from faxing) appears in the body of the text (on all pages, more prevalent from pages 42). Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 – 10, and 12 – 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 12, and 14, it was not understood what was meant by, "...a

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likelihood of said transmit power controlling signal...”. For purposes of examination, it was assumed this was in reference to determining the received power control signaling (as per page 22 lines 18 – 26 of the specification). Appropriate clarification is required.

Claims 2 –10, and 13 are rejected for at least those reasons in independent claims 1 and 12.

Regarding claims 2, 3, and 13, it was not understood what was meant by, “... a *perch* receiving quality...”. For purposes of examination, it was assumed this was in reference to a channel (such as the pilot) transmitted from a base station (as per page 24, lines 8 –24 of the specification). Appropriate clarification is required.

Regarding claim 4, it was not understood what quantified, “...when an absolute value of the likelihood of said transmit power controlling signal is *large*...”. For purposes of examination it was assumed this was a value that guaranteed an acceptable level of signal quality (such as FER) (as per starting page 34, line 4, and ending page 35, line 8). Appropriate clarification is required.

Regarding claim 6, it was not understood what was meant by, “...open loop transmit power...”. For purposes of examination it was assumed this level was open loop transmit power control (as commonly referred to in the art). Appropriate clarification is required.

Regarding claim 7, it was not understood what constituted, “...so that an absolute value of the likelihood would be *large* when, the receiving quality is *good* and so that an absolute value of the likelihood would be *small* when the receiving quality is *bad*.” For purposes of examination it was assumed this was a value that guaranteed an acceptable level of signal quality (such as FER). Appropriate clarification is required.

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Regarding claims 8 – 10, it was not understood what constituted "... first reference value *or more*, and second reference value *or more*." Appropriate clarification is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, and 12 – 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Tiedemann, Jr. et al. (Tiedemann, US Patent No. 6,396,867).

Regarding claim 1, Tiedemann teaches of a transmit power controlling method in a code division multiple access communication system comprising a radio base station and a motile station (Figures 1 and 2), characterized in that said radio base station transmits a transmit power controlling signal for controlling transmit power of the mobile station (column 7, lines 20 –35), and that said mobile station generates a likelihood of said transmit power controlling signal on the basis of the received transmit power controlling signal and the receiving quality to generate a variation amount of the transmit power on the basis of said likelihood, so that the transmit power of the mobile station would be controlled on the basis of the variation amount (column 7, lines 20 –35).

Regarding claim 2, Tiedemann teaches all the claimed limitations as recited in claim 1. Tiedemann further teaches of characterized in that said likelihood is generated with a perch

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receiving quality of a signal transmitted from said radio base station also taken into account (column 7, lines 35 –44).

Regarding claim 12, Tiedemann teaches of a mobile station (Figures 1 and 2), characterized by comprising: receiving means for receiving transmit power controlling information transmitted by a radio base station (column 7, lines 20 –35 and column 8, lines 25 – 45); measuring means for measuring the receiving quality of a wave transmitted by said radio base station (Figures 1 and 2 and column 7, lines 20 –35 and column 8, lines 46 –61); likelihood generating means for generating a likelihood of said transmit power controlling information on the basis of the transmit power controlling information received by said receiving means and the receiving quality measured by, said measuring means (Figures 1 and 2 and column 7, lines 20 – 35 and column 8, lines 46 –61); variation amount generating means for generating a variation amount of the transmit power on the basis of the likelihood generated by said likelihood generating means (Figures 1 and 2 and column 7, lines 20 –35 and column 8, lines 46 –61); and controlling means or controlling the transmit power of a mobile station on the basis of the variation amount generated by said variation amount generating means (Figures 1 and 2 and column 7, lines 20 –35 and column 8, lines 46 –61 and column 4, lines 40 –54).

Regarding claim 13, Tiedemann teaches all the claimed limitations as recited in claim 12. Tiedemann further teaches of characterized by further comprising perch receiving quality measuring means for measuring the receiving quality of a perch signal transmitted by said radio base station, wherein said likelihood generating means generates a likelihood with the receiving quality measured by said perch receiving quality measuring means taken into a consideration (column 7, lines 35 –44).

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Regarding claim 14, Tiedemann teaches of a code division multiple access communication system comprising a radio base station and a mobile station (Figures 1 and 2), characterized in that said radio base station comprises: transmit power controlling information generating means for generating transmit power controlling information for controlling the transmit power of a mobile station (Figures 1 and 2 and column 4, lines 40 –54); and transmitting means for transmitting the transmit power controlling information generated by said transmit power controlling information generating means (Figures 1 and 2 and column 7, lines 20 –35 and column 8, lines 46 –61 and column 4, lines 40 –54), and that said mobile station comprises: receiving means for receiving the transmit power controlling information transmitted by said transmitting means (Figures 1 and 2 and column 7, lines 20 –35 and column 8, lines 46 –61 and column 4, lines 40 –54); measuring means for measuring the receiving quality of a wave transmitted by said radio base station (Figures 1 and 2 and column 7, lines 20 –35 and column 8, lines 46 –61 and column 4, lines 40 –54); likelihood generating means for generating a likelihood of said transmit power controlling information on the basis of the transmit power controlling information received by said receiving means and of the receiving quality measured by said measuring means (Figures 1 and 2 and column 7, lines 20 –35 and column 8, lines 46 –61 and column 4, lines 40 –54); variation amount generating means for generating a variation amount of the transmit power on the basis of the likelihood generated by said likelihood generating means (Figures 1 and 2 and column 7, lines 20 –35 and column 8, lines 46 –61 and column 4, lines 40 –54); and controlling means for controlling the transmit power of a mobile station on the basis of the variation amount generated by said variation amount generating means (column 8, lines 46 –61 and column 4, lines 40 –54).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (Tiedemann, US Patent No. 6,396,867) as applied to claim 1 above, and further in view of Chen (Chen, US Patent No. 6,067,458).

Regarding claim 3, Tiedemann teaches all the claimed limitations as recited in claim 1. Tiedemann further teaches of characterized in that the receiving quality of a perch signal transmitted from said radio base station is compared with the receiving quality of a transmit power controlling signal (column 7, lines 35 –44), and it is determined that a receiving condition is no longer proper when the both of the receiving qualities are deteriorated (column 7, lines 45 – 60), and in that the likelihood is generated on the basis of a result of the determination (column 7, lines 45 –60).

Tiedemann does not specifically teach of so that it is determined that a call is cut off when only one of the receiving qualities is deteriorated.

In a related art dealing with power control using a variable rate system, Chen teaches of so that it is determined that a call is cut off when only one of the receiving qualities is deteriorated (Figures 6A and 6B and starting column 8, line 60 and ending column 9, line 6).

It would have been obvious to one skilled in the art at the time of invention to have included into Tiedemann's power control system, Chen's quality metric, for the purposes of transmission

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of data at an acceptable power level to ensure acceptable error rate while not transmitting to much unnecessary power (and hence noise), as taught by Chen.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (Tiedemann, US Patent No. 6,396,867) as applied to claim 1 above, and further in view of Honkasalo et al. (Honkasalo, US Patent No. 5,995,496).

Regarding claim 4, Tiedemann teaches all the claimed limitations as recited in claim 1. Tiedemann does not specifically teach of characterized in that, when an absolute value of the likelihood of said transmit power controlling signal is large, an upper limit value and a lower limit value of the transmit power of a mobile station are updated and maintained so that the transmit power of said mobile station is limited between said upper limit value and said lower limit value (though does make note of level of quality in column 8, lines 9 –24 and step size in column 18, lines 39 –43).

In a related art dealing with power control based on quality, Honkasalo teaches of when an absolute value of the likelihood of said transmit power controlling signal is large, an upper limit value and a lower limit value of the transmit power of a mobile station are updated and maintained so that the transmit power of said mobile station is limited between said upper limit value and said lower limit value (column 4, lines 26 –34).

It would have been obvious to one skilled in the art at the time of invention to have included into Tiedemann's power control system, Honkasalo's power ranges, for the purposes of maintaining a quality link without transmitting excess power, as taught by Honkasalo.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (Tiedemann, US Patent No. 6,396,867) as applied to claim 1 above, and further in view of Chen et al. (Chen, US Patent 6,512,925).

Regarding claim 5, Tiedemann teaches all the claimed limitations as recited in claim 1. Tiedemann further teaches of that the transmit power of said mobile station is switched on the basis of the size of said likelihood so as to be transmit power of the mobile station that is generated on the basis of said likelihood (column 7, lines 35 –44 and column 4, lines 40 –54 and column 5, lines 22 –35).

Tiedemann does not specifically teach of characterized in that an average value of the transmit power of a mobile station is generated or either said generated average transmit.

In a related art dealing with power control, Chen teaches of characterized in that an average value of the transmit power of a mobile station is generated (starting column 13, line 62 and ending column 14, line 3) and either said generated average transmit (starting column 13, line 62 and ending column 14, line 3).

It would have been obvious to one skilled in the art at the time of invention to have included into Tiedemann's power control system, Chen's average power transmission, for the purposes of aligning transmit power levels for a given receiver to a desired level (thus mitigating interference issues), as taught by Chen.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (Tiedemann, US Patent No. 6,396,867) as applied to claim 1 above, and further in view of Soliman (Soliman, US Patent 6,101,179).

Regarding claim 6, Tiedemann teaches all the claimed limitations as recited in claim 1.

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Tiedemann further teaches, that the transmit power of said mobile station is switched on the basis of the size of said likelihood so as to be transmit power of the mobile station that is generated on the basis of said likelihood (column 7, lines 35 –44 and column 4, lines 40 –54 and column 5, lines 22 –35).

Tiedemann does not specifically teach of characterized in that open loop transmit power is generated on the basis of the receiving quality of the receiving power of another channel different from a channel being used or said generated open loop transmit power.

In a related art dealing with power control in a CDMA system, Soliman teaches of characterized in that open loop transmit power is generated on the basis of the receiving quality of the receiving power of another channel different from a channel being used and said generated open loop transmit power (column 4, lines 19 –30).

It would have been obvious to one skilled in the art at the time of invention to have included into Tiedemann's power control system, Soliman's open loop control provisions, for the purposes of implementing an open loop system where the probability of successful first access probe increases (thereby decreasing the level of interference), as taught by Soliman.

13. Claims 7 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (Tiedemann, US Patent No. 6,396,867) as applied to claim 1 above, and further in view of Gilhousen et al. (Gilhousen, US Patent No. 5,056,109).

Regarding claim 7, Tiedemann teaches all the claimed limitations as recited in claim 1. Tiedemann further teaches of characterized in that said transmit power controlling signal is a signal comprising two values (column 4, lines 40 –54 and column 5, lines 36 –40).

Tiedemann does not specifically teach of that said likelihood is calculated so that an absolute value of the likelihood would be large when, the receiving quality is good and so that an absolute value of the likelihood would be small when the receiving quality is bad.

In a related art dealing with power control, Gilhousen teaches of that said likelihood is calculated so that an absolute value of the likelihood would be large when, the receiving quality is good and so that an absolute value of the likelihood would be small when the receiving quality is bad (column 5, lines 21 –44 and column 5, lines 56 –65).

It would have been obvious to one skilled in the art at the time of invention to have included into Tiedemann's power control system, Gilhousen's calculation system, for the purposes of responding to the deleterious effects of fading effectively to control power, as taught by Gilhousen.

Regarding claim 8, Tiedemann in view of Gilhousen teach all the claimed limitations as recited in claim 7. Both Tiedemann and Gilhousen further teach of characterized in that the transmit power is increased when said likelihood is a first reference value or more (Tiedemann: starting column 10, line 58 and ending column 11, line 24 and Gilhousen: column 14, lines 29 – 41), that the transmit power is maintained when said likelihood is less than said first reference value and a second reference value or more (Tiedemann: starting column 10, line 58 and ending column 11, line 24 and Gilhousen: column 14, lines 29 –41), and that the transmit power is decreased when said likelihood is less than said second reference value (Tiedemann: starting column 10, line 58 and ending column 11, line 24 and Gilhousen: column 14, lines 29 –41).

Regarding claim 9, Tiedemann in view of Gilhousen teach all the claimed limitations as recited in claim 7. Gilhousen and Tiedemann further teach of characterized in that the transmit

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power is increased when said likelihood is said first reference value or more (Tiedemann: starting column 10, line 58 and ending column 11, line 24 and Gilhousen: column 15, lines 36 – 50 and column 13, lines 1 – 11), that the transmit power is toggle-controlled when said likelihood is less than said first reference value and said second reference value or more, and that the transmit power is decreased when said likelihood is less than said second reference value (Tiedemann: starting column 10, line 58 and ending column 11, line 24 and Gilhousen: column 15, lines 36 – 50 and column 13, lines 1 – 11).

Regarding claim 10, Tiedemann in view of Gilhousen teach all the claimed limitations as recited in claim 7. Tiedemann and Gilhousen both further teach of characterized in that the transmit power is increased when said likelihood is said first reference value or more (Tiedemann: starting column 10, line 58 and ending column 11, line 24 and Gilhousen: column 15, lines 36 – 50 and column 13, lines 1 – 11), that a variation amount of the transmit power is made to be the power corresponding to said likelihood when said likelihood is less than said first reference value (Tiedemann: starting column 10, line 58 and ending column 11, line 24 and Gilhousen: column 15, lines 36 – 50 and column 13, lines 1 – 11) and said second reference value or more, and that the transmit power is decreased when said likelihood is less than said second reference value (Tiedemann: starting column 10, line 58 and ending column 11, line 24 and Gilhousen: column 15, lines 36 – 50 and column 13, lines 1 – 11).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanmay S Lele whose telephone number is (703) 305-3462. The examiner can normally be reached on 9 - 6:30 PM Monday – Thursdays and on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A. Maung can be reached on (703) 308-7745. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

✓
Tanmay S Lele
Examiner
Art Unit 2684

tsl
April 13, 2004


NAY MAUNG
SUPERVISORY PATENT EXAMINER